WHAT IS CLAIMED IS:

[C001]   1.   A method for testing battery connectivity in a battery-backed up system, the method comprising:

inducing a step increase in a battery bus voltage; and

monitoring a magnitude of a corresponding current pulse of a battery charge due to the step increase in the battery bus voltage,

wherein the magnitude of the current pulse provides an indicator of battery connectivity.

[C002]   2.   The method of claim 1 further comprising issuing an indicator when the magnitude of the current pulse drops below a pre-determined value.

[C003]   3.   The method of claim 1, wherein the step increase is less than about 10% of a float level of the battery bus voltage (52).

[C004]   4.   The method of claim 1, wherein the step increase is applied for less than about a two second duration.

[C005]   5.   The method of claim 1 further comprising forecasting a battery health by periodically testing battery connectivity and observing a trend of the current pulse (64) over a period of time, wherein a change in magnitude of the current pulse over the period of time provides an indicator for the battery health.

[C006]   6.   A method for forecasting a battery health in a battery-backed up system, the method comprising:

periodically conducting a connectivity test;

observing a magnitude of a current pulse obtained by the connectivity test over a period of time; and

using a trend in change in magnitude of the current pulse over the period of time to indicate the battery health,

wherein the current pulse is a response to a step increase in a battery bus voltage.

[C007]   7.   The method of claim 6, wherein the connectivity test comprises:

inducing the step increase in the battery bus voltage; and

monitoring the magnitude of a corresponding current pulse of a battery charge due to the step increase in the battery bus voltage,

wherein the magnitude of the current pulse provides an indicator of battery connectivity.

[C008]   8.   A method of claim 6 further comprising issuing an indicator when a decline in the trend of the change in magnitude of the current pulse reaches a predetermined value.

[C009]   9.   A battery-backed up system comprising:

at least one battery to supply power to the system for maintaining a steady output;

at least one converter for charging the battery; and

a controller for detecting the battery connectivity,

wherein the controller is configured for providing a step increase in a battery bus voltage and monitoring a magnitude of a corresponding current pulse of a battery charge.

[C010]   10.   The system of claim 9 further comprising a current sensor to detect the current pulse.

[C011] 11. The system of claim 9, wherein the magnitude of the current pulse is an indicator of battery connectivity.

[C012] 12. The system of claim 9 further comprising a plurality of batteries connected in series.

[C013] 13. The system of claim 9 further comprising a plurality of converters, wherein at least one converter is coupled to an input of the system, and wherein at least one converter is coupled to an output of the system.

[C014] 14. The system of claim 9, wherein the controller sends an indicator when the magnitude of the current pulse reaches a pre-determined value.

[C015] 15. A computer readable medium for storing and/or transmitting instructions that, when executed by a computer, perform a method for detecting battery connectivity in a battery-backed up system, the method comprising:

inducing a step increase in a battery bus voltage; and

monitoring a magnitude of a corresponding current pulse of a battery charge due to the step increase in the battery bus voltage,

wherein the magnitude of the current pulse provides an indicator of battery connectivity.

[C016] 16. The computer readable medium of claim 15, wherein the method further comprises issuing an indicator when the magnitude of the current pulse drops below a pre-determined value.

[C017] 17. A computer readable medium for storing and/or transmitting instructions that, when executed by a computer, perform a method for forecasting a battery health in a battery-backed up system, the method comprising:

periodically conducting a connectivity test;

observing a magnitude of a current pulse obtained by the connectivity test over a period of time; and

using a trend in change in magnitude of the current pulse over a period of time to indicate the battery health,

wherein the current pulse is in response to a step increase in a battery bus voltage.

[C018]   18.   The computer readable medium of claim 17, wherein the connectivity test comprises:

inducing the step increase in a battery bus voltage; and

monitoring the magnitude of a current pulse of a battery charge due to the step increase in the battery bus voltage,

wherein the magnitude of the current pulse is an indicator of battery connectivity.

[C019]   19.   The computer readable medium of claim 17, wherein the method further comprises issuing an indicator when a decline in the trend in change of magnitude of the current pulse reaches a predetermined value.